Volunteer Lake Assessment Program Individual Lake Reports

COBBETTS POND, WINDHAM, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,048	**Max. Depth (m):**	19.2	**Flushing Rate (yr^{1})**	0.4
Surface Area (Ac.):	345	**Mean Depth (m):**	5.2	**P Retention Coef:**	0.8
Shore Length (m):	7,400	**Volume (m^3):**	7,208,000	**Elevation (ft):**	177

TROPHIC CLASSIFICATION

Year	Trophic class
1986	MESOTROPHIC
2003	EUTROPHIC

KNOWN EXOTIC SPECIES

Variable Milfoil

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

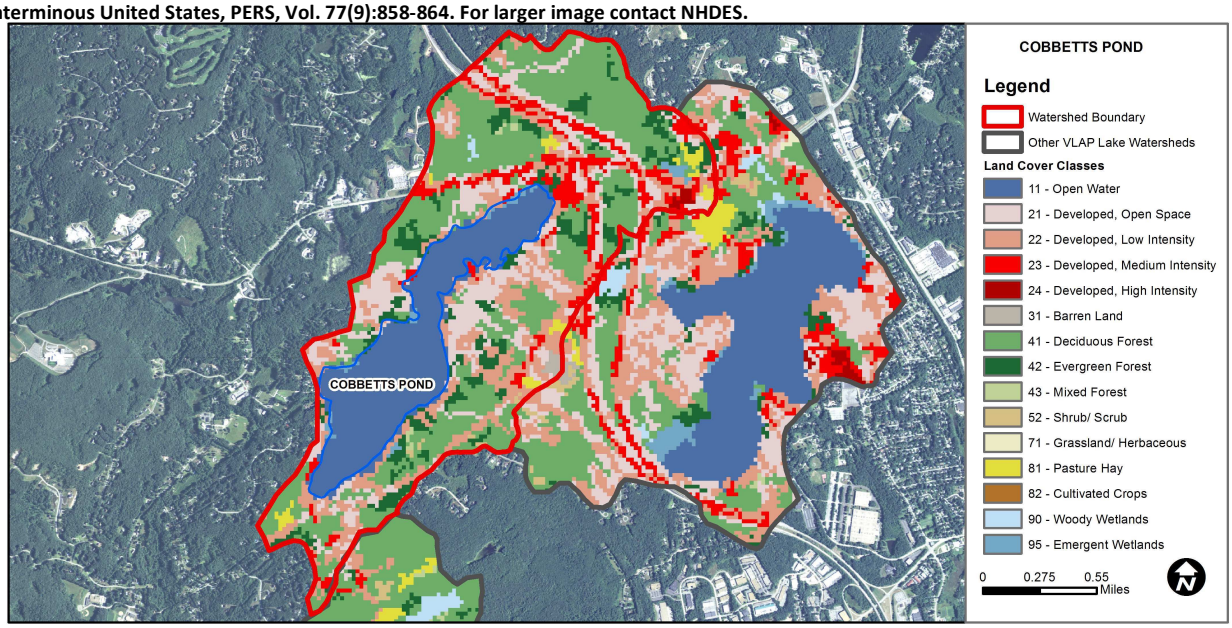
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Good	At least 10 samples with 1 sample but < 10% of samples exceeding criteria.
	D.O. (mg/L)	Very Good	At least 10 samples with 0 exceedances of criteria.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Cautionary	One exceedance of single sample criteria but not enough data to calcuate geometric mean. More data needed.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

COBBETTS POND - DUNKAN BEACH	E. coli	No Data	No Data for this parameter.
COBBETTS POND - TOWN BEACH	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.
COBBETTS POND - TOWN BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



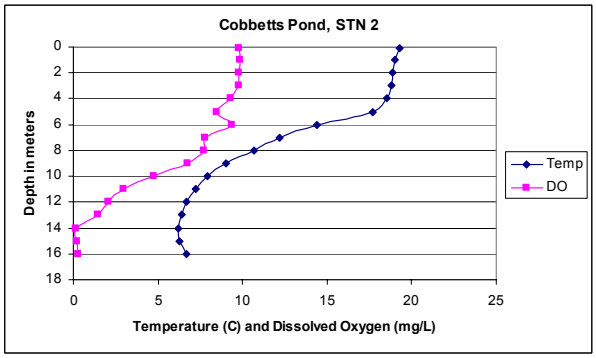
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	19.5	Barren Land	0.34	Grassland/Herbaceous	0
Developed-Open Space	14.9	Deciduous Forest	31.57	Pasture Hay	1.44
Developed-Low Intensity	15	Evergreen Forest	7.92	Cultivated Crops	0
Developed-Medium Intensity	7.25	Mixed Forest	0.22	Woody Wetlands	0.14
Developed-High Intensity	0.27	Shrub-Scrub	0.22	Emergent Wetlands	0.9

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
COBBETTS POND, STN 2, WINDHAM, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll was slightly above average for most NH lakes. Historical trend analysis indicates a significantly increasing (worsening) chlorophyll level since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were elevated and well above NH lake medians.
- **E. COLI:** E. coli level was well below state standard for public beaches in 2012.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were average except for the elevated metalimnetic (middle water layer) levels, which may have been caused by algae. Although phosphorus levels have remained stable since 2010, historical trend analysis indicates epilimnetic (upper water layer) phosphoruslevels have significantly increased (worsened) since monitoring began. Tributary phosphorus levels were relatively low.
- **TRANSPARENCY:** Transparency levels were lower in 2012, likely due to heavy pine pollen. Historical trend analysis indicates a significantly decreasing (worsening) lake transparency.
- **TURBIDITY:** Turbidity was elevated in Castleton Culvert, Dinsmore East and Dinsmore West. Approx. 1 inch of rainfall occurred prior to sampling and stormwater may have contributed to elevated turbidity levels.
- **PH:** pH levels were sufficient to support aquatic life.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer (June, July and August) to better assess summer and historical water quality trends. Chloride levels are approaching the state standard for chronic toxicity. It is recommended to try and implement low salt zones or utilize salt alternatives where possible. Recently, a watershed ordinance was passed by the Town, along with other projects in the watershed to reduce non-point source pollution. Keep up the great work and we hope to see water quality improve or stabilize in the future.

Dissolved Oxygen & Temperature Profile



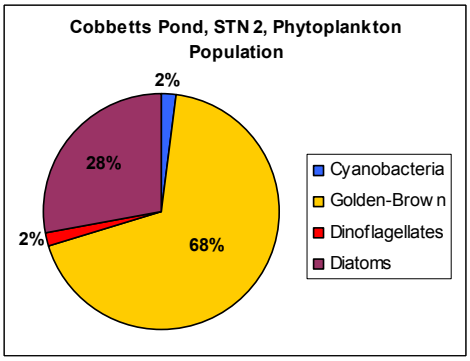


Table 1. 2012 Average Water Quality Data for COBBETTS POND, STN 2

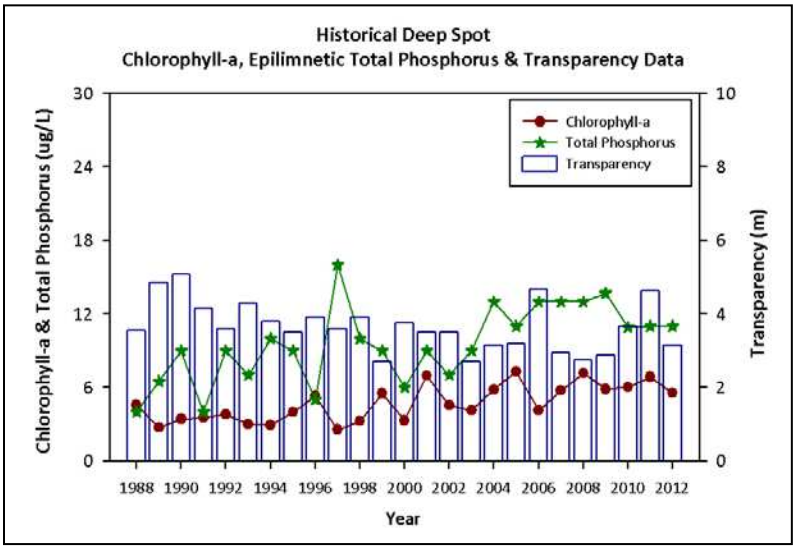
Station Name	Alk.	Chlor-a	Chloride	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	#/100ml	ug/l	m		ntu	
							NVS	VS		
Armstrong			79	376		13			0.44	7.21
Castleton Culvert			130	562					2.92	6.89
Community Beach					30					
Connies Brook			140	434		18			0.74	7.13
Connies Brook @ 111			62	233					0.29	6.92
Dinsmore East				441		15			2.32	7.16
Dinsmore West			52	222		15			7.12	7.11
Herons Cove			140	497					8	6.96
Messina				62		16			0.96	6.29
Station 2 Epilimnion	27.1	5.55	75	296		11	3.15	4.10	1.03	7.69
Station 2 Metalimnion				306		45			0.87	6.9
Station 2 Hypolimnion				315		18			1.62	6.7
Walkey Rd			80	335		25			3.2	7.12

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Degrading	Data significantly increasing (worsening) since monitoring began.
Transparency	Degrading	Data significantly decreasing (worsening) since monitoring began.
Phosphorus (epilimnion)	Degrading	Data significantly increasing (worsening) since monitoring began.



This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
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